

Recommendations on Personal Stockpiling of Influenza Antiviral Medications Missouri Department of Health and Senior Services, November 7, 2005

Concern about the spread of avian influenza A (H5N1) has caused many individuals in the United States, including in Missouri, to ask their health care providers for prescriptions for the antiviral medication oseltamivir (trade name Tamiflu[®], manufactured by Roche). Others have attempted to purchase this drug over the Internet.

Recommendations of the Missouri Department of Health and Senior Services (DHSS)

DHSS does not recommend personal stockpiling of oseltamivir or other antiviral agents for the following reasons:

- Personal stockpiles of oseltamivir will compound the existing problems with availability of this antiviral agent in the United States during the upcoming influenza season for those who may need it most. Commercial supplies of oseltamivir are expected to improve gradually over the next few years and the national stockpile will increase as well.
- The existing, limited supplies of oseltamivir and other antiviral agents should be prioritized as outlined below.
 - The highest current priority for use of oseltamivir is for treatment of people during the upcoming regular influenza season who are at highest risk from serious complications from influenza infection (e.g., persons ≥ 65 years, children 6-23 months of age and persons with certain chronic diseases).
 - The next highest priority for use of oseltamivir (and other influenza antiviral medications) is for prophylaxis in persons at high risk of serious complications from influenza infection who are exposed to influenza (e.g., a hospital or nursing home with an outbreak of influenza or a household in which someone has been diagnosed with influenza) during the regular influenza season.
 - Inappropriate and inconsistent use of oseltamivir will increase resistance to oseltamivir by both avian and non-avian strains of influenza viruses by exposing the viruses to selective pressure towards resistance. Sub-inhibitory concentrations of an agent, as might result from inappropriate and inconsistent use, are particularly likely to induce resistance. This would seriously affect our ability to use this antiviral medication for avian influenza, as well as for other circulating strains.
 - To date, almost all cases of avian influenza in humans have been associated with exposure to birds rather than person-to-person transmission.
 - The benefits of antivirals may be limited when used as therapy, even when initiated within 48 hours of onset. In uncomplicated cases, antiviral agents only reduce symptom duration and viral shedding by 1-2 days. Data are also limited regarding the effectiveness of antivirals in preventing serious influenza complications.
 - To date, most avian influenza isolates are still sensitive to oseltamivir. However, increasing resistance has been reported in birds and in one human case from Vietnam. In addition, increasing resistance (up to 16%) of other circulating strains of influenza virus to oseltamivir has also recently been identified.
 - Four drugs are licensed for the treatment or prophylaxis of influenza infections: the adamantanes (amantadine and rimantadine) and the neuraminidase inhibitors (oseltamivir

and zanamivir). At the current time, oseltamivir (Tamiflu) is the only antiviral known to have some effectiveness in the treatment and prophylaxis of avian influenza. Widespread resistance to the adamantanes has been reported, and inhaled zanamivir has not been studied in cases of avian influenza.

- If a different strain of influenza emerges to cause widespread human illness, it is not possible to predict which antiviral agent would be most effective.
- Personal stockpiles of oseltamivir may actually increase the potential for harm when used without consulting a health-care provider. All antiviral medications are associated with side effects of varying degrees. An individual may take an antiviral when it is not appropriate (e.g., when an antibiotic is indicated) or when it is not needed (e.g. with an upper respiratory infection). In addition, oseltamivir may have serious interactions with other medications that an individual is taking.
- Oseltamivir is expensive (currently \$65.99 for a 10-pill bottle, which is equivalent to a 5-day course of treatment). If one were to use it for prophylaxis, the course would extend for weeks or months, adding significantly to the cost.
- Oseltamivir has a limited shelf-life. When stored properly, capsules are only guaranteed for 5 years and the oral suspension for 2 years. No one knows when a pandemic will arise, and if his or her personal stockpile will still be potent.

If you have questions regarding antiviral medications, please contact Eddie Hedrick, DHSS' Emerging Infections Coordinator, by email at Eddie.Hedrick@Dhss.mo.gov or by telephone at 573-522-8596.

References

1. CDC. Prevention and control of influenza: Recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2005; 54 (RR-8):1.
2. Le M. Avian flu: isolation of drug-resistant H5N1 virus. *Nature* 2005; 437:1108.
3. Moscona, A. Neuraminidase inhibitors for influenza. *N Engl J Med* 2005;353:1363.
4. Voordouw, ACG. Annual revaccination against influenza and mortality risk in community-dwelling elderly persons. *JAMA* 2005;292:2089.
5. WHO. Avian influenza A (H5N1) infection in humans. *N Engl J Med* 2005;353:1374.